Case Study: Proven benefits of insurance backed stretch and flex programs with CDM Smith

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Safety is the most important aspect of the construction industry. Due to daily strenuous physical activities that occur on a construction jobsite, having your body warmed up, pain-free and ready to perform labor intensive tasks is critical. This case study will examine the correlation between the past and present daily stretching format at the construction jobsite with CDM Smith and Insurance Company. For continuity, it will include an interview with the same CDM Smith Region H&S Manager as well as similar surveys to find out the construction workers thoughts and reactions to stretching prior to work. Although 10 to 20 minutes of labor is taken away from actual work and is dedicated to implementing stretching programs, when properly performed, the benefits outweigh the costs. Some of the obvious benefits from properly stretching have not changed, for example; increased flexibility, reduced stress, increased circulation, enhanced coordination, and an increase in energy. What has changed is the realization that there are many unforeseen benefits like; less lost man-hours, fewer workers compensation claims, and decreased OSHA incidents. A summary of the old and new stretching with CDM Smith in the construction industry and opinions from construction workers are included.

Keywords: Stretching, safety, warm up benefits, muscular strains, productivity, insurance

Introduction

Stretch and flex programs are a means to prevent and decrease the total number of injuries created on the construction jobsite. Due to noticeable benefits in the construction industry stretch and flex programs have been on the rise. The dangers on a construction jobsite are endless and it only takes one lapse of judgment or one false step for an injury to occur. Since a lot of labor intensive acts are involved in the construction industry it only makes sense for workers to warm up and stretch. Athletes would never enter a game or start practice before properly stretching and warming up, so why wouldn't a worker who has to pull, move, or lift objects do the same? The main benefits from stretching and warming up include increased flexibility, improved range of motion, improved circulation, better posture, relieved stress, reduced risk of injury, reduced muscular soreness, and enhanced physical performance. The little time it takes to properly stretch each day prior to work is obviously more beneficial than not stretching at all. According to Zurich; sprains, strains, pains, or other musculoskeletal disorders account for 32 percent of injury cases in 2014, with a median number of 9 days away from work to recuperate (Zurich 2016). By incorporating a stretch and flex program through your insurance company everyone on the jobsite will receive its benefits and injury numbers will reduce. Companies pride themselves on keeping injury numbers down since safety is such a large priority is the construction industry. Stretch and flex programs are the easiest and most beneficial ways to enhance the safety and overall wellbeing of your employees and workers on a day to day basis.

Benefits of stretch and flex programs

Stretching on a consistent basis leads to many benefits. According to Zurich, "Zurich has seen its customers experience a 61 percent reduction in sprain or strain frequency, and a 30 percent reduction in strain or sprain severity" (Gauder 2014). These numbers are achieved by the increased range of motion workers experience by utilizing the Stretch and Flex program. Increased range of motion allows employees to stay mobile and less prone to injury. In the construction industry, workers and employees are asked to conduct a

wide variety of movements and are placed in many uncomfortable positions to accomplish their job for the day. Increased range of motion makes dealing with these physical demands easier and with less risk of injury. Another benefit from stretching is improved posture. With improved posture comes minimized fatigue that can lead to less aches and pains. Without stretching or proper workouts, posture can decline with age and makes one's body more susceptible to injury. Bad posture leads to aches and pains in multiple areas of the body, mainly back, hips, knees, and neck. With regular stretching posture can improve which can lead to more benefits (Gonzales 2016).

Circulation is another major advantage that comes with stretching. With improved circulation, workers have experienced a decrease in recovery time from sore muscles and returning to work quicker after minor injuries. If stretching is implemented daily at a jobsite it will help workers and employees get their blood flowing and increase their circulation. Warming up and stretching warms and wakes the body up and gets the body ready in the early mornings when work is required.

Flexibility is one of the largest advantages that come from stretching on a daily basis. Multiple benefits have become evident from the use of flexibility exercises, including improved joint range of motion and function and enhanced muscular performance (Gonzales 2016). Flexible muscles are known to improve daily performance in any field. Jobs that require; lifting, bending, reaching, stooping, pushing, and pulling all become easier with increased flexibility. So many nagging and aching injuries can be solved with simple stretches. The muscular system is connected throughout your entire body. For example, when an individual has a sore lower back the most likely cause is from another muscle group becoming tight from repetitive exertion. This is simply solved by properly using stretches from the Stretch and Flex program to stretch the glutes, hamstrings, and hips to relieve the strain on the individual's back. Due to stretching, increased flexibility has greatly reduce day to day aches and pains and allows individuals to make it through their work days with more ease.

The last major benefit from daily stretching, especially as a group or company, is the building of team morale and decreased stress levels. A company that incorporates a daily stretch and flex program allows all members of the project team to be involved in a group activity that helps start the day of in a positive manner. According to the survey question I sent out, some responses included information saying that subcontractors have asked to join CDM Smith in the daily stretches due to the morale that it builds within the group. With increased team morale, productivity will increase as well as a positive mental state that fosters confidence in the workers. Yoga, the art of stretching, is designed to concentrate on the mind, body, and breathing. Stretching is a way to relax and release your stresses before the day starts. It gives a moment of calmness and allows one to reflect on them before starting the work day. As previously stated, having a healthy and positive mindset is just as important as having a healthy body to perform. With incorporated stretch and flex programs both body and mind benefits have been reached.

Installation

The benefits and advantages which have come from daily stretch and flex programs outweigh the time it takes to perform the stretches. The installation and continuous process to improve the stretch and flex program within the company of CDM Smith is led by CDM Smith's region H&S manager Greg Parana. The company began installing the stretch and flex program back in 2008 and began to increase the participation in 2014. The installation was developed internally within the company before reaching out to its insurance company Zurich. With an insurance company such as Zurich, CDM Smith requested a program to be developed. Zurich took the reins from there. Zurich contacted the company and scheduled dates and times to come out to the project jobsites and observe the field crews and employees first hand at work. After they witnessed what the workers go through on a daily basis they brought their information back to their experts that created a hand tailored stretch and flex program to reach maximum benefits based on the field crew's movements. The program provides all information and instructions on how to properly perform the stretches for the greatest benefit of the employee without causing injury. The company provides pamphlets for each worker to carry with them.

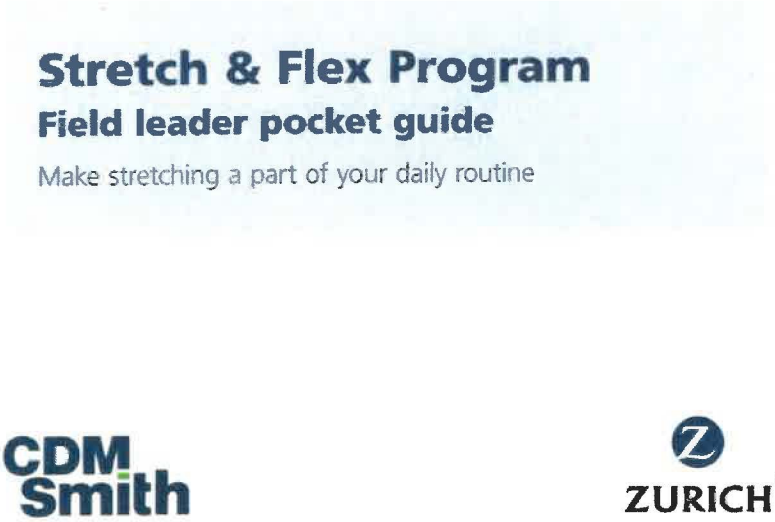

Figure 1: Stretch and Flex Program Guide for Field Leader
Source: Zurich 2014

Program in Place

The mandatory steps for the program in place for CDM Smith are as follows; target major muscle groups, warm up, hold each stretch for a minimum of 15-30 seconds, don't bounce, focus on a pain free stretch, then relax and breathe freely. There are four routines, the first starts with a dynamic warm-up which includes stationary walking, overhead stretch, 3-point neck stretch, hand stretch, 3-point back stretch, standing hamstring stretch, and standing quad stretch. The second begins with a dynamic warm-up which includes stationary walking, large arm circles, triceps stretch, forearm stretch, side bend stretch, calf stretch, and standing knee lift. The third routine begins with a dynamic warm-up which includes stationary walking, shoulder circles, upper back/chest stretch, forearm rotation, 3-point back stretch, Achilles stretch, and side lunch. The fourth routine also starts with a dynamic warm-up which includes stationary walking, small arm circles, finger stretch, low back extension, waist twist and hold, ankle flex stretch, and standing knee lift. All of these stretches are held in one notebook pamphlet small enough to fit in your back pocket. The field leader should carry one to demonstrate the stretches and routines for the workers. The pamphlet goes into detail for each individual stretch explaining what the purpose of the stretch is, how to properly perform the stretch, how long to perform the stretch, what muscle groups should be getting targeted, as well as pictures to help assist in explaining each stretch. It is a very small pamphlet loaded with all the information one needs to properly stretch and to get moving (Zurich 2014). Due to the success of the Stretch and Flex program over the last three years, CDM Smith has decided to expand the amount of stretches as well as increase the funding for managers to be properly trained in implementing the program. This is evident by the distribution of the Implementation and Leader's Guide – Field Operations manual (Gonzales 2016).

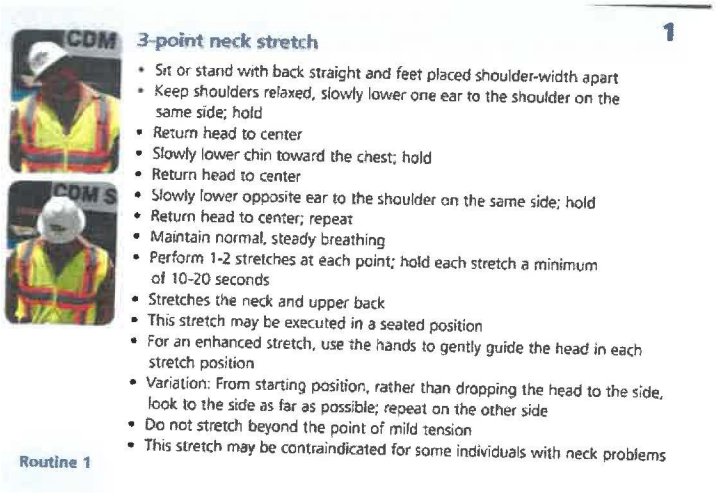
1
3-point neck stretch
• Sit or stand with back straight and feet placed shoulder-width apart
• Keep shoulders relaxed, slowly lower one ear to the shoulder on the same side; hold
• Return head to center
• Slowly lower chin toward the chest; hold
• Return head to center
• Slowly lower opposite ear to the shoulder on the same side; hold
• Return head to center; repeat
• Maintain normal, steady breathing
• Perform 1-2 stretches at each point; hold each stretch a minimum of 10-20 seconds
• Stretches the neck and upper back
• This stretch may be executed in a seated position
• For an enhanced stretch, use the hands to gently guide the head in each stretch position
• Variation: From starting position, rather than dropping the head to the side, look to the side as far as possible; repeat on the other side
• Do not stretch beyond the point of mild tension
• This stretch may be contraindicated for some individuals with neck problems
Routine 1

Figure 2: 3 Point Neck Stretch Instruction Guide
Source: Zurich 2014

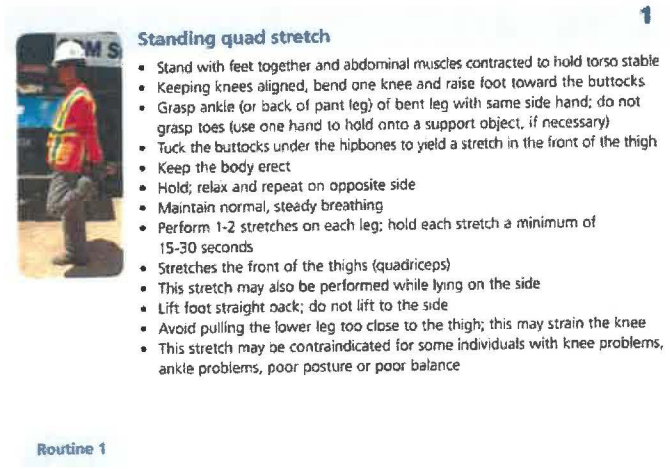
1
Standing quad stretch
• Stand with feet together and abdominal muscles contracted to hold torso stable
• Keeping knees aligned, bend one knee and raise foot toward the buttocks
• Grasp ankle (or back of pant leg) of bent leg with same side hand; do not grasp toes (use one hand to hold onto a support object, if necessary)
• Tuck the buttocks under the hipbones to yield a stretch in the front of the thigh
• Keep the body erect
• Hold; relax and repeat on opposite side
• Maintain normal, steady breathing
• Perform 1-2 stretches on each leg; hold each stretch a minimum of 15-30 seconds
• Stretches the front of the thighs (quadriceps)
• This stretch may also be performed while lying on the side
• Lift foot straight back; do not lift to the side
• Avoid pulling the lower leg too close to the thigh; this may strain the knee
• This stretch may be contraindicated for some individuals with knee problems, ankle problems, poor posture or poor balance
Routine 1

Figure 3: Standing Quad Stretch Instruction Guide.
Source: Zurich 2014

Methodology

The objectives of this case study are as follows:

- To demonstrate the effectiveness of the stretch and flex program's use over the last three years.
- To highlight the proven benefits of stretch and flex programs with CDM Smith.
- To encourage the increased use and implementation of the stretch and flex program in any company or corporation.
- To document the proven benefits of incorporating a professional insurance company in the process.
- To spread knowledge of stretch and flex programs and prove how it has enhanced the wellbeing of workers and employees.
- To educate those who question spending time out of a work day to stretch and warm up.

The main method used for this research strategy will be both quantitative and qualitative. The case study will be proven quantitatively via statistics and surveys of current workers on the number and severity of injuries on the jobsite. The surveys will be given to a current construction project that has the stretch and flex program incorporated. The information received from the survey questions will provide accurate perspectives and thoughts from workers and employees that work in the field and use the stretch and flex program on a daily basis. The qualitative part will come from an interview with CDM Smith's region H&S manager, Greg Parana, who will provide insight on the evolution of the stretch and flex program over the past three years and the involvement of their insurance company Zurich.

Case Study

CDM Smith's main goal is to incorporate the stretch and flex program to improve their employees overall health and well-being. According to CDM Smith, "Safety first, our clients expect it, we demand it, and our employees live it" (CDM Smith 2016). CDM Smith has maintained very low injury numbers over the last three years and they wish to keep it that way. Safety is highly emphasized in the construction industry and for good reason. Due to its success, it is only a matter of time before OSHA incorporates mandatory Stretch and Flex programs with all their major construction companies. One large scale company which everyone is familiar with, Exxon Mobile has also adopted the Flex and Stretch program within the last three years and they too have seen the benefits it can provide (ExxonMobile 2014). CDM Smith and their relationship with their insurance company is a prime example of the advantages the stretch and flex programs provide and how it can improve physical and mental wellbeing. The survey process was provided by a project team working in Camp Pendleton California.

Project/Company Specifics

- Company: CDM Smith
- Insurance Company: Zurich
- Project Location: Harbor Dr At Vandegrift Blvd, Camp Pendleton, CA 92055
- General super intendant at Weslaco: Mike Johnson
- Regional Safety Manager: Greg Parana
- Number or survey participants: 12
- Number of interview participants: 1
- Number of projects with the program: 30
- Number of workers using the program: 200

Figure 4 & 5: CDM Smith heavy civil construction company and Zurich insurance
Source: CDM Smith 2016 and Zurich 2016

Results and Discussion

The following information was gathered through surveys with the CDM Smith Camp Pendleton California project under super intendant Mike Johnson and an interview with CDM Smith's region H&S manager Greg Parana. This information was gathered during the project's completion, hoping to compile data based on the individual workers thoughts on the stretch and flex program and compare how effective CDM Smiths stretch and flex program has been since 2014.

Goals and Thoughts

The goal of this stretch and flex program is to increase safety on the jobsite and continue the growth of the stretch and flex program within CDM Smith. According to a literature review the goal of stretching is, "they should promote flexibility and suppleness; exert sufficient effort on the musculoskeletal system to raise the body temperature; and warm or prime the muscles, tendons, and connective tissues (Smith 1994). The program is a team building activity that occurs at the beginning of each day. It creates positive morale within the project team and crew and allows for a stress free start to a workday.

Based on the survey responses, the crew's collective thoughts on the program prove that it is very beneficial. Workers who range in various ages as well as years in the field all took the survey questions and all participants who responded said that the stretch and flex program is beneficial and would recommend it to anyone in the field. Also every participant responded by saying that they felt more energetic, alert, better circulation, and enhanced coordination after their daily stretch with the company.

The goals throughout the Stretch and Flex program being incorporated are to provide work specific stretches to help employees and workers increase overall flexibility and range of motion. The stretches will lengthen muscle tissue, which causes the muscles to be less prone to trauma tears and other types of muscular injuries. A subsequent goal is to also allow the muscles and tendons to recover more quickly from job fatigue.

Challenges Encountered

There aren't a whole lot of challenges involved on the process of a Stretch and Flex program. The challenges that are encountered come at the beginning of the process and possibly at the end. It may be a challenge to get a stretch and flex program up and running. This can be difficult by having to convince the funding of the program as well as training managers how to properly execute the Stretch and Flex program. The idea must come internally and have a general idea of launching a company-wide stretch and flex program. It may be a challenge to get the insurance company involved and have an evaluator come to jobsites in order to observe crews and what employees do on a daily basis. After these challenges are overcome it is generally up to the insurance company to provide a hand-picked stretch and flex program for the company.

The next challenge encountered will be launching the stretch and flex program to select jobsites or all jobsites. With this stretch and flex program having been incorporated a long time ago it has given employees and workers time to evaluate the stretch and flex program and provide feedback based on their experiences. A challenge that may occur can come from the employees and workers requesting more stretches. Throughout the survey a question was asked if they would want more stretches and exercises. All of the participants had selected more. Based on the surveys the employees and workers would like more stretches that range from back stretches, arm stretches, and leg stretches. The challenge to this would be to have the insurance company come back out and reevaluate the company and its crews in order to add new stretches to the program.

Conclusion

Based on the research, interview, and surveys performed it can be concluded that the implementation of the stretching program into construction companies has been extremely beneficial to both the company and the individual workers. As stated previously, safety is one of the biggest concerns in the construction field.

According to OSHA, Out of 4,379 worker fatalities in private industry in calendar year 2015, 937 or 21.4% were in construction. Also, if construction was able to eliminate construction incidents concerning; falls, struck by, electrocution, and caught in between, also known as the Fatal Four, it would save around 602 workers' lives every year (United States Department of Labor 2015). If a 10 to 15 minute stretch each day could help bring those numbers down and help ensure the safety of its workers than it should be implemented by every company.

Recommendations for Future Research

The CDM Smith stretch and flex program is an example to all major companies that safety comes first and that stretch and flex programs are beneficial. This program gives an example on how to incorporate a proper stretch and flex program and how important it is to have an insurance company that also wants to help implement a program. Future research on this topic could be limitless. Ideas to pursue this same subject could include the comparison of major companies that use stretch and flex programs. With further research, these numbers could be compared directly between companies as well as looking at the differences between each program to find out which stretches are actually most beneficial to workers and employees. Another idea for this subject could include focusing on the insurance side of the stretch and flex program. This report is an example based off of information provided by CDM Smith and its employees. If another report was created based on information received by insurance companies and their thoughts on the matter it would be interesting to compare results. One last idea to pursue this topic could be to go through OSHA and discuss how the Stretch and Flex program is impacting the construction industry as a whole. At first, thinking of stretching before construction work sounds somewhat silly, but the more thought that is put into it and the more the program is utilized by other construction firms, the easier it is to realize that stretching is not only a benefit to the company and employees, but a must to ensure the successful and safe completion of a construction site.

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